3: Clark S-5 (1950) 1951 MH1 Iraq MH1

CHAPTER FIVE

SIGNIFICANT RECENT AND CONTEMPORARY ADVANCE IN IRAQ

Although the various obstacles outlined in the previous chapter are serious ones, there is a growing body of evidence which suggests that certain of them are being at any rate partly overcome; some of them in ways which are significant pointers to the directions along which positive advance towards compulsory education may be possible.

ECONOMIC AND SOCIAL ADVANCE FAVOURABLE TO EDUCATIONAL DEVELOPMENT

Certain economic and social advances are taking place which are likely to be favourable to the development of education, both as regards producing more revenue and in improving the standard of life of parents so that they can afford to allow their children to attend school.

241 407 *Evidence of Improved Agricultural Practice.* A few of the more enlightened landowners, especially those who are not absentee landlords and take an active interest in their farms, are engaged in the important business of applying power and science to the land. Large tracts of land in the rainfall region which have not previously been cultivated are being opened up by the mechanical plough. Indeed, it has been fascinating to see land which was hitherto regarded as desert being ploughed at night by modern tractors with headlights. Other landowners and farmers are experimenting, with considerable success, in the growing of relatively new crops such as American cotton of high quality. In some of the northern provinces there are cattle bred to considerably higher standards than formerly. The writer was present at a lively discussion between farmers who were suggesting ways of conserving by modern silage the nutritious spring vegetation most of which is at present only scantily cropped and then left to be burnt up by the summer sun.

654 It has also been gratifying to observe the growing interest which is being taken in certain of the experimental farms organized by the Directorate of Agriculture.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

mals offers a more practical answer to their needs at this time. Experience in Iraq shows that tractor plowing may increase yields by 20 to 50 percent, largely through more effective destruction of weeds and partly also through better preparation of the soil. Much the same effect could, however, be achieved through better animal-drawn plows replacing those which now, for the most part, barely scratch the surface and fail to uproot the weeds. Means for the acquisition of such tools and improved draft animals should be created through the organization of cooperatives and the provision of better credit facilities.

Mechanization will nevertheless play an increasingly important role in the future, especially as labor becomes more scarce and additional land becomes available for cultivation. Mechanization has already facilitated the expansion of cultivation in the dry-farming areas of Mosul and the new pump-irrigated lands in central Iraq. While certain areas in the irrigation zone are undoubtedly overpopulated in relation to land currently available, in other areas, particularly in the rain-fed zone, labor is scarce relative to the supply of land. As development schemes are launched and new land is opened up for settlement, the available manpower on lands already under cultivation may well be reduced. The government will need therefore to take steps to insure that mechanization will keep pace with developing requirements. In the period immediately ahead, however, the government should be mindful of the possibility that mechanization initiated by landowners may result in a substantial reduction of the portion of the crop going to sharecroppers or in the displacement of sharecroppers before alternative means of employment or settlement become available. Through its control over the importation and distribution of machinery and the extension of credit for the purchase of such machinery, the government will have the power to influence the direction of mechanization and thus minimize to some extent possibly adverse social consequences.

At present only a small portion of Iraqi agriculture is mechanized. Combines and tractors in operation are reported to number 320 and 750 respectively, with about half of the number concentrated in the provinces of Mosul and Baghdad. Of these, 75 combines and 81 tractors are owned by the Agricultural Machinery

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

407 475 427 647 Administration, an autonomous agency within the Ministry of Economics. The AMA rents this machinery to farmers and, in addition, is responsible for testing and demonstrating new machinery, licensing of imports and controlling the distribution of the limited supply of spare parts in order to prevent black-marketing.

Some provision for rental of machinery, whether by the government or by private enterprise, will be necessary for some time, partly because it enables farmers to become acquainted with the value of such machinery and partly because many farmers do not have sufficient capital for outright purchase. As long as private enterprise is incapable of providing this service at reasonable rentals or until cooperatives can be established, continuation of the government rental service appears essential. On the whole, therefore, the AMA's three-year program to replace and expand its machinery park and to equip repair shops appears desirable despite the obvious drawbacks of government operation. At present, however, the AMA is operating at a substantial loss. In the calendar year 1951, for instance, its rental income will probably not exceed ID 50,000 compared with estimated operating costs, including depreciation, of about ID 150,000. Since the beginning of 1950, when it started operations as a fiscally autonomous agency, it has had to cover its deficits out of the ID 500,000 capital which the government undertook to provide. While the government should probably defray that part of the AMA's expenditures not directly attributable to the rental operations, the overall deficit should be reduced by gradually increasing rental charges. Rental charges on tractors, in particular, appear unduly low and may be depriving private persons of the incentive to purchase tractors either for their own use or for rental to others.

407 471 647 Since the overhead costs of the AMA's rental operations will probably always remain rather high and its machinery must be transported over considerable distances, it is important that the government encourage as much as possible private purchase and operation of machinery. The extension of credit for this purpose [452] appears essential. At present, however, the Agricultural Bank cannot lend money on farm equipment partly because it is short of funds and partly because such loans would not afford sufficient security in the absence of any legal requirement to register title TO MACHINERY.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

to machinery. In the future cooperative ownership and operation, especially in the new settlement areas, should be encouraged as one of the best means of extending the use of machinery on a practicable and economical basis. The experience of the Dujaila cooperative, which, owing to low overhead and transport costs, rents machinery to its members at rates lower than those of the AMA and yet is apparently able to cover the cost of depreciation, seems promising in this respect.

Lack of repair facilities and spare parts have greatly handicapped mechanization. The government is seeking to overcome this difficulty both by establishing its own repair shops and by requiring importers to provide repair facilities and maintain minimum stocks of spare parts. Such centrally located shops will be available, however, only for major repairs. Since local repair facilities are now almost wholly lacking, steps should also be taken to establish a considerable number of small shops equipped to undertake minor repairs. In addition, courses designed to train drivers in elementary maintenance are urgently needed. The cost of mechanization will remain discouragingly high unless the life of machinery is prolonged by more adequate maintenance and repair.

3. Soil-building and Forage Crops: Fertilizers

The cultivation of soil-building and forage crops is virtually unknown even though the fertility of the soil needs to be replenished and an improvement in feed supply would make the greatest single contribution to an increase in the low productivity of livestock. In the irrigation zone berseem clover, sown in the grain stubble in late summer, would provide a particularly good pasture, soiling and hay crop. In the rain-fed region winter oats and vetch, when cut and cured, would provide a good reserve feed. In the irrigation zone quick-growing crops such as millet could be grown for summer pasture; and more corn, sorghum and legumes such as cowpeas and mungo beans should be cultivated.

Little fertilizer is used and animal manure is generally collected and dried for use as fuel. With the expanding cultivation of crops such as cotton, the use of fertilizer is becoming more urgent. There is need for soil analysis and extensive experimentation to ascertain the fertilizer requirement and the effect of fertilizer on

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

241 For a considerable time to come, however, it will be an important factor in agriculture. Proper fallow will promote nitrification and store in the soil up to 30 percent of the precipitation during the fallow period. This is true, however, only where the fallow land is kept free of vegetation which depletes the soil moisture and uses up the accumulated plant food. In Iraq this is seldom done, either because fallow is used as pasture or because the available tools [407] are not adapted to destroy the deep-rooted perennial weeds. The typical wooden "nail" plow, drawn by ill-fed and ill-kept animals, reduces the annual weeds but only encourages the more persistent, deeper-rooted species which subsequently offer stiff competition for crops following the fallow period.

In the rain-fed zone considerable land is tilled where the rainfall is marginal. The yield on such land is usually very poor. During a 10-year period, for instance, there will generally be five fallow years, two crop failures, two fair crops and one good crop. Better results might on the average be obtained if grain were planted every year on rows two and a half to three feet apart. This would reduce the plant population per unit of area and permit intertillage to control weeds and conserve moisture. Tests of this sort might well be made.

Use of Fertilizers

Although soils are generally fertile and have sufficient potash, phosphorus and nitrogen for crop production under the existing fallow system, experiments have indicated that applications of nitrogen increase yields under certain conditions. This is true of vegetables, of green gram following wheat and barley in the rotation, of cotton following small grain, of dates and citrus fruits and of rice produced in areas where silt does not replenish the soil. On the other hand, in Iraq the application of fertilizer to wheat and barley in the fall has failed to increase yields materially, and its application to small grain frequently promotes excessive vegetative growth. Presumably this lack of response is due to the fact that grain is grown on fallow land which has had a chance to replenish its supply of nitrogen. It is possible, however, that even on such land nitrogen may be deficient in the spring, making a top dressing at that time beneficial. Experience elsewhere has demonstrated that proper crop rotation and use of fertilizers make

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

241 aration of the soil. Similarly, small stationary threshers may offer a better alternative than large harvesting combines to the present methods of threshing by flaying and the tramping of animals. The government should pay at least as much attention to the task of getting simple, inexpensive tools into the hands of the cultivators as to the much more ambitious program of agricultural mechanization. [412] Good hand tools, for example, are almost nonexistent. Improvement in draft animals is also necessary. While the supply of draft animals cannot be increased rapidly, it is possible to get animals of greater strength and endurance by better feeding and selection.

In the longer run, however, there is no doubt that mechanization of agriculture will assume growing importance. Physically, the country with its flat broad plains is ideally suited to mechanization although the canals and ditches in the irrigation zone offer some impediments to the use of machinery. [464] Moreover, even now there are labor shortages at sowing and harvest times in some parts of the country, particularly in the North. In the future such shortages may become really acute as manpower is drawn from the land to take advantage of the new employment opportunities created by the over-all development program and as some of the fellahin working on land now under cultivation leave to settle new land. Under such circumstances mechanization may become the principal means of maintaining and expanding agricultural output. In its policy respecting mechanization the government will need to steer a careful course. On the one hand, it will want to keep some check on mechanization as long and wherever there is danger of displacing fellahin before alternative means of employment become available; on the other hand, it will find it desirable to accelerate mechanization whenever labor shortages become serious. Through its control over imports and credit, the government possesses effective methods of influencing the rate of mechanization.

241 407 427 The United States Lend-Lease Program gave mechanization its first impetus. At present there are probably about 170 combines and 550 tractors in operation in the country, with about half of the number concentrated in the provinces of Mosul and Baghdad. In addition, 75 combines and 81 tractors are owned and made

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

available for rental by the Agricultural Machinery Administration, an autonomous agency within the Ministry of Economics.[7]

Further progress will be seriously impeded, however, unless means are found to prolong the life of machinery which is now less than half what it is in the United States. The shortage of spare parts and repair facilities has been very discouraging to machinery owners. The failure of private dealers to provide these largely inspired the government's original decision to establish the Agricultural Machinery Administration as a monopoly for the importation and distribution of agricultural machinery. In accordance with suggestions made by an earlier International Bank Mission, the government has tried to meet the problem by different measures, namely by licensing dealers only on condition they agree to set up repair facilities and maintain an adequate stock of spare parts. The enforcement of these requirements, however, will not provide a complete solution, even if it is supplemented by completion of the AMA program for setting up its own repair facilities at Baghdad, Kirkuk, Mosul, Diwaniya and Kut. The AMA and private dealers should also cooperate in conducting courses in operation and elementary maintenance of machines for drivers. Moreover, simple local facilities to carry out all but major repairs are needed. An adequate number of mechanics both for the central and local repair shops must be trained, and for this purpose foreign shop supervisors and instructors will be necessary. The Industrial Bank may have to cooperate by providing small loans for equipping local shops.

The AMA now performs a number of useful functions. It regulates imports and the distribution of spare parts and tests different types of machinery for their adaptability to conditions in Iraq. Most important, it maintains a pool of machinery for rental. In some respects its operations could undoubtedly be improved.

[7] An official estimate given to the Mission gives a total of 320 combines and 750 tractors. Customs statistics for the years 1945 to 1950 inclusive, however, show that only 632 tractors and 262 combines were imported. Part of these are already out of commission. An on-the-spot survey in each province by a member of the Mission indicated that only 170 combines and 549 tractors, exclusive of government-owned machines, were in operation. Of the combines, Mosul had 75; Baghdad, 75; seven provinces, one to five each; and five provinces, none. Of the tractors, Baghdad had 250; Mosul, 150; Kut, 40; Kirkuk, 23; Erbil, 15; six provinces, less than 10 each; and three provinces, none.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

655 407 427

With a larger and more qualified staff it could do a better job in advising farmers on the type of machinery best suited to their needs and could undertake the tasks outlined in the preceding paragraph. It might also pay more attention to finding and testing the type of machinery that would be particularly useful on smaller holdings. Above all, in its rental service it should charge rates which will not cause it to run a large deficit or discourage private ownership of machinery.

The rental service itself performs a useful function and should be continued until private enterprise can provide the same service on the basis of a reasonable return or until sufficient cooperatives can be organized to provide machinery for their members. Many landowners cannot now afford to buy a machine, and others will not risk buying until they have had a chance to test its value by renting one. The AMA, however, now sustains heavy losses on its rental operation. For the calendar year 1951 its operating expenditures are expected to be ID 150,463 as compared with a projected rental income of only ID 50,000. For the two years 1950 and 1951, the total cash deficit of the Administration will probably amount to about ID 222,000.[8] It has been able to finance such deficits only by using up the balance of the capital contribution of ID 500,000 which the government originally made to the agency. Since ID 235,750 of this contribution consisted of machinery and buildings, very little of the remaining cash will have been left by the end of 1951. The AMA's financial situation is all the more acute because it now urgently needs funds to purchase new machinery and equipment at a rate of perhaps ID 250,000 per year. In the past there has been no depreciation reserve for the replacement of machinery. To meet this financial emergency it will be necessary to make the rental operation self-sustaining. In part this can be accomplished by reducing expenditures. Probably more important, however, will be an increase in rentals, especially those on tractors which are now relatively low. A continuing government contribution to the total budget of the AMA will probably be merited, but only to the approximate extent to which AMA expenditures are attributable to functions other than the rental of

[8] For the 1950 and 1951 budgets of the AMA, see Tables I and II in the appendix.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

machinery. At the same time the cost of new machinery and equipment will need to be financed—possibly out of Development Board funds if earlier plans to borrow for this purpose from the International Bank do not materialize.

Government rental of machinery should at best be considered a temporary expedient. It is wasteful, primarily because overhead expenses are high. The transportation of machinery from central shops to the renters tends to be expensive and to expose the machinery to excessive wear and tear. Private and cooperative ownership of machinery should therefore be encouraged. One step in this direction would be to enable the Agricultural Bank to lend money for this purpose on the security of the machinery. In the past the absence of any provision for registering title to such machinery has prevented such loans. Another important measure would be to encourage the establishment of cooperatives for the collective ownership of machinery, especially in the new agricultural areas which are to be opened. At present the producers' cooperative in the Dujaila project owns a number of tractors. Because overhead costs are relatively low it is able to rent them out at lower rate than the AMA while still apparently covering the cost of operation and depreciation.

V. Control of Pests and Diseases

Livestock Pests and Mortality

More effective control of pests and diseases would also materially help to improve yields. This is particularly true of livestock. Because of lack of funds, equipment and trained personnel, no systematic campaigns for eradicating specific groups of diseases have been undertaken. Many livestock diseases, particularly of the parasitic type, are rife. Among the principal livestock diseases are foot and mouth disease; haemorrhagic septicaemia; anthrax; sheep pox; blackleg; parasitic gastritis; tick-borne diseases (anaplasmosis and piroplasmosis); fowl cholera; Newcastle disease; various manges; and dourine. The available staff is wholly insufficient to control, let alone eradicate, any epidemic which might break out. A serious outbreak of disease would endanger the livestock industry of neighboring countries as well as that of Iraq.

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

APPENDIX

407 ●
647

TABLE I

AGRICULTURAL MACHINERY ADMINISTRATION BUDGET FOR 1950
(actual results)

REVENUE		EXPENDITURES	
Rentals of machinery ID	40,262	Salaries ID	11,073
Sale of agricultural machinery and tools	7,267	Cost-of-living allowances	4,844
Sale of spare parts	317	Transport	117
Fines	195	Transfer	7
Repairs of agricultural machinery	106	Furniture	1,317
Transport charges	584	Printing & stationery	290
Interest on deposits	2,376	Postal, telegraph and telephone charges	276
Sundry	138	Rent	1,330
		Water and light	1,664
		Machines, cars & fuel	40,981
		Buildings	30,284
		Bonuses	399
		Temporary officials and employees	20,679
		Sundry	4,557
Total ID	51,245	Total ID	117,818

7: International Bank N, S-4 (1951) 1952 MH1 Iraq MH1

407
647

TABLE II

Agricultural Machinery Administration Budget for 1951
(estimates)

I. Ordinary or Operating Budget

Revenue		Expenditures	
Rentals	ID 50,000	Operation of garages and repair shops	38,726
		Agricultural machinery operation	48,708
		General administration	25,884
		Total cash expenditures	113,318
		Depreciation allowance	37,145
		Total expenditures	ID 150,463

II. Capital Budget

Revenue		Expenditures	
Sale of machinery, tools, etc.	ID 20,000	Purchase of agricultural machinery	54,000
		Purchase of trucks, jeeps and tractors	21,500
		Imports of spare parts for sale	25,000
		Diwaniya shop	3,000
		Requisites for completion of shops	7,500
		Sundry capital expenditures	1,000
		Total	ID 112,000

III. Total Budget

Total cash revenue	ID 70,000	Total cash expenditures	ID 225,318
		Total expenditures	262,463
		Total cash deficit	ID 155,318
		Total deficit	192,463

29:Dunn S-4 (1952)1952 MI Middle East
Iraq MH1

Tigris, and a large reservoir at Bekhme in the mountains on the Great Zab. The Mission endorsed these projects and recommended others to compensate for diversion and to balance the systems. 312

The Iraq Irrigation Development Commission believes that the area under irrigation can be increased to 12 million acres by the installation of additional storage facilities, by drainage, rehabilitation, and by new supplies of water.[44]

It is agreed generally that the rain-fed zones in the north must continue to depend primarily on rainfall. Although no accurate estimates are available, the total area which might be available for cultivation in this area is thought to be substantial.

Along with irrigation, an important means of improving productivity is drainage. This would have an immediate effect; other proposals depend on the necessarily slow process of persuading farmers to abandon age-old methods of cultivation. 241 311

As much as 20 to 30 per cent of the cultivated land is said to be abandoned because of salt accumulation. On a large part of the remaining land, yields have declined as much as 50 per cent. Drainage—almost totally neglected—the report concluded, should therefore be prosecuted with utmost vigor.[45]

MECHANIZATION

Because of the cost, the Mission predicted that mechanization would proceed slowly. This conclusion was reached in the face of experience which shows that tractor ploughing may increase yields 20 to 50 per cent, largely through more effective destruction of weeds and better preparation of the soil.[46] No doubt mechanization will become increasingly important as additional land is placed under cultivation and labor becomes scarce. 241 407

About 750 tractors and 320 combines are in the country at the present time. A government agency owns 75 of the combines and 81 tractors and plans to import an additional 2,500 tractors and 550 combines with auxiliary equipment.[47] About 50 per cent of the machinery will be retained at government-owned tractor stations and rented or let out under contract.[48] The rest will be sold on easy terms to the farmers.

The International Bank approved a modified version of this machinery program but suggested that rental charges be increased to make the project self-sustaining, and adequate repair shops and demonstration and training programs were recommended.

SOIL BUILDING

It is obvious that the fertility of the soil needs to be replenished. [134] 242

Cultivation of soil-building and forage crops is said to be virtually unknown. Attention needs to be given to the production of legumes. Commercial fertilization must be studied and, if possible, plants should be built to produce inorganic and organic materials. Soil analyses also are generally needed.

---

44 *Economic Development of Iraq*, *op. cit.*, p. 16.
45 *Ibid.*, p. 17.
46 *Ibid.*, p. 18.
47 *Ibid.*, p. 19.
48 *Final Report of the United Nations Economic Survey*, *op. cit.*, p. 33.

29:Dunn S-4 (1952)1952 MI Middle East
Iraq MH1

248 established tenure systems, and the primitive methods likely will disappear slowly.

Earlier British experiments in the area indicated March 15 to April 15 as the optimum sowing dates, but reports are that cotton usually is planted much later, either because of laxness or because of labor competition with other crops. Some farmers try to get wheat off and then plant cotton, which throws the cotton very late. Cotton planted in April will begin opening in August. The Rogers Acala undergoes a dormant period of several weeks after the first bolls open and then continues to set and mature bolls up to January. About 80 per cent of the cotton is made on what is called this second or late flush. Picking goes on during all this period.

GINNING

248 407 Until a few years ago there were only about four saw gins with 10 stands in the country and no roller gins. The large profits in recent years on the limited number of gins and the general interest in expanding the crop have prompted a rush to buy new equipment. A total of seven gins operated last season, of which three were newly constructed by the Murray Gin Company. This company has sold three more new gins with a total of 16 stands, which are in process of erection. All the new gins are fully equipped with overhead Mitchell cleaner-feeders and one has the new incline cleaner. Not only the equipment but also the buildings, offices, and storage houses are very modern.

All the gins, with one exception, are privately owned. However, the government will buy another small gin for experiment station use in ginning pure seed that is produced on the station's farm. All the gins except one near Mosul are in the Baghdad and Kut areas.

A great deal of hand labor is employed in the storage houses for picking out foreign matter and damaged and immature locks of cotton before ginning. There are reports that as much as 35 per cent of the weight of the seed cotton coming to the gins is taken out as extraneous foreign matter added to increase the weight of the bales. The government is making a strenuous effort to protect the reputation of cotton by encouraging better ginning.

To facilitate transportation, the ginners make a light 400-pound bale covered on six sides in light-weight burlap and bound with a continuous narrow steel band which is simply tucked under at the end instead of buckled. There are no other compresses and the cotton must be exported in the form in which it comes from the gin. This results in a heavy freight charge, since the gin bales have a density of only 16 to 18 pounds.

442 MARKETING

[489] The farmers themselves take the seed cotton in bags to a central market place, usually located at the gins, and sell to merchants. Transportation is scarce. Oftentimes the cotton is carried by the farmer in sacks on his back or his head for miles.

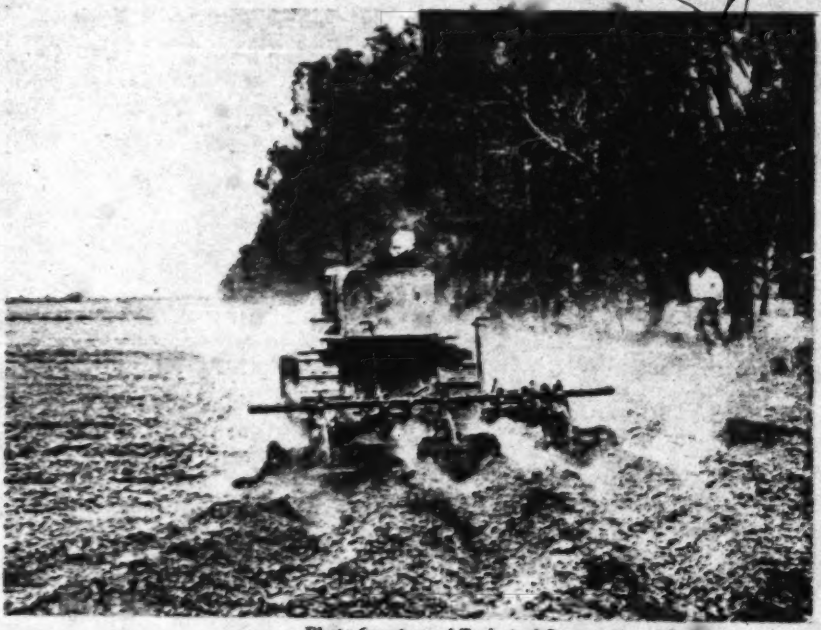
The merchants make little differentiation in price for fiber quality. They do make allowances for foreign matter and moisture which, merchants claim, are added by the farmers in an effort to increase the weight. The merchants gin the cotton for their own account and retain title to the seed and the lint.

The merchandising system can best be described as haphazard. The volume of cotton is small, and merchants handle the cotton along with many

29:Dunn S-4 (1952)1952 MI Middle East
Iraq MH1

COTTON IN IRAQ

241
407



—Photo Courtesy of Technical Cooperation Administration

Modern tractors with gang ploughs are now in general use in Iraq for ploughing cotton. Because the land is so heavy, tractors are usually of the heavy-duty track type. Most of the tractors are owned by the government and rented with drivers to farmers on an hourly basis. The Iraq Government is conducting experiments with all types of mechanical equipment in the hope that new lands in the rainfed areas to the north, too sparsely populated to farm with hand labor, may be brought into production with complete mechanization.

427

These plants have been found to set 75 per cent of their bolls before the end of August.

242

Dr. Shelby Cain, cotton agronomist from Texas A. & M. College supplied by the Point Four Program, is concentrating on this problem in the cotton breeding program. He will be assisted by two Iraqi specialists now being trained at Texas A. & M. To some observers it appears that more work is needed on cultural practices before a full program on cotton breeding is started. For instance, the influence of planting dates, irrigation, fertilization, and cultivation on plant growths in this environment needs to be investigated before the more fundamental research in genetics and breeding can be used effectively.

Fertilization

Research on the problem of maintaining soil fertility is needed also and is included in the broad program for the future. There is an obvious deficiency of nitrogen and humus in the soil, and probably other plant foods. Much of the land in both of the main valleys has been under continuous cultivation

242
134

29:Dunn S-4 (1952)1952 MI Middle East ...
Iraq MHI

242 134 for centuries, and farmers have depended on the silt deposited from the overflows to maintain the fertility. Increased use of canals and dams for irrigation has made the overflows less frequent. Experiments conducted for the past three or four years with commercial fertilizers have shown no significant benefit, but the United States experts feel the tests are not conclusive and should be continued with various soil conditioners.

While depending on basic research to stimulate long-range production, the Director General is trying to force an immediate improvement through regulations requiring the application of techniques known to be beneficial.

248 656 *Controls*

In an effort to concentrate cotton production on the better suited lands and to facilitate insect control, seed control, and other beneficial measures, regulations have been promulgated requiring government permits for all cotton acreage planted. These permits, based primarily on suitability of the soil and availability of water and labor, are issued on the recommendation of local representatives of the Ministry of Agriculture. However, the enforcement system is inadequate, and it is generally admitted that the regulation is not closely followed, especially in areas where the local sheiks are extremely powerful and are practically a law unto themselves.

654 242 407

—Photo Courtesy of Technical Cooperation Administration

At the government cotton experimental farm near Baghdad a double-handled board is used to level the high spots in a newly ploughed field. Outside the government farms little leveling is done. Through the Point Four Program the United States is cooperating with the Iraq Government in experiments and demonstrations to improve cotton cultural practices.